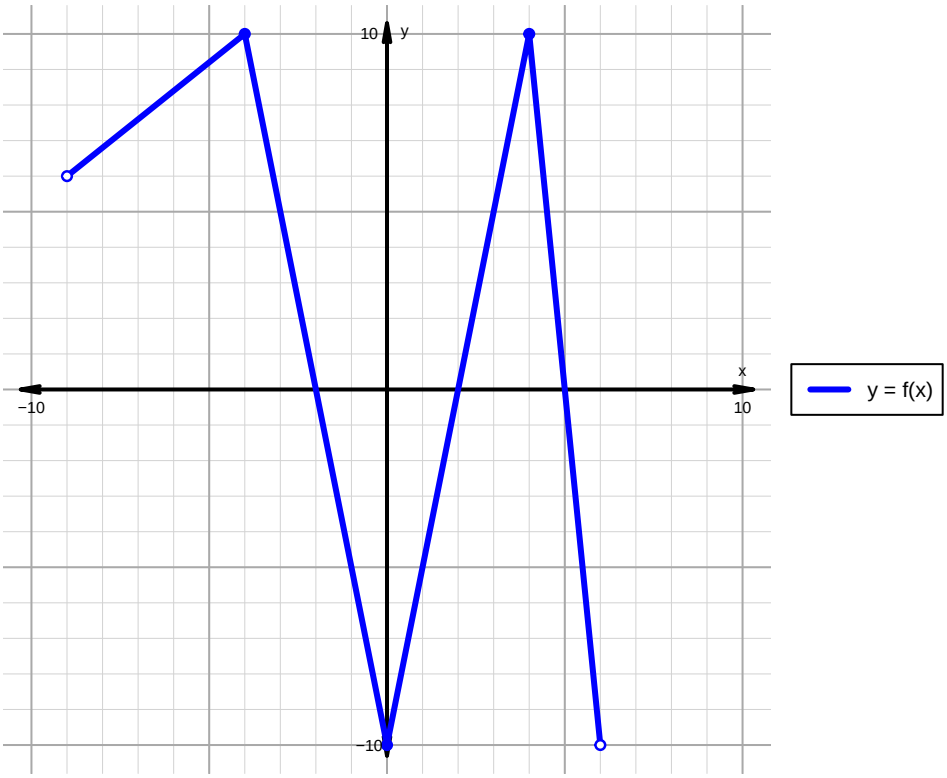
Name: Date:

Intervals, Transformations, and Slope Solution (version 47)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-9,-2)\cup(2,5)$
Negative	$(-2,2)\cup(5,6)$
Increasing	$(-9,-4)\cup(0,4)$
Decreasing	$(-4,0)\cup(4,6)$
Domain	$(-9,6)$
Range	$(-10,10)$

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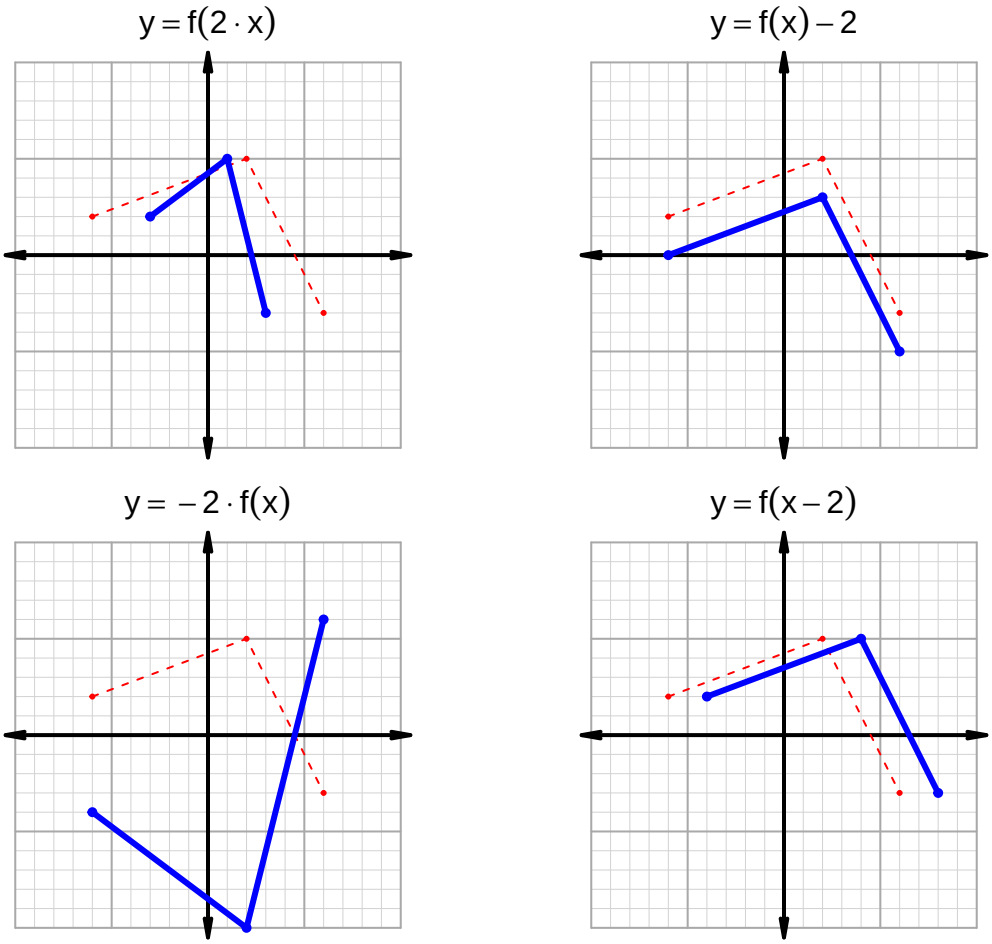
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 13$ and $x_2 = 27$. Express your answer as a reduced fraction.

x	$g(x)$
13	97
27	34
34	13
97	27

$\frac{f(27)-f(13)}{27-13} = \frac{34-97}{27-13} = \frac{-63}{14}$

The greatest common factor of -63 and 14 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{2}$$